

List of Claims:

Claims 1-7 (cancelled)

8. (previously presented) A method for classifying a speech signal having a background noise portion with a background noise level, the method comprising the steps of:
extracting a parameter from the speech signal;
estimating a noise component of the parameter;
removing the noise component from the parameter to generate a noise-free parameter;

selecting a pre-determined threshold, wherein the step of selecting said pre-determined threshold is unaffected by said background noise level;
comparing the noise-free parameter with a said pre-determined threshold; and
associating the speech signal with a class in response to the comparing step.

Claims 9-10 (cancelled)

11. (previously presented) The method of claim 8 wherein a plurality of parameters are extracted to classify the speech signal.

Claims 12-19 (cancelled)

20. (currently amended) A method for processing a speech signal having a background noise portion with a background noise level, the method comprising the steps of:
extracting a set of speech parameters from the speech signal;
forming a set of noise-free parameters based on the speech parameters;
selecting a pre-determined [a] set of thresholds, wherein the step of selecting said pre-determined set of thresholds is unaffected by said background noise level;

comparing each of the noise-free parameters with each corresponding threshold of a said pre-determined set of thresholds; and
classifying the speech signal based on the comparing step.

Claim 21 (cancelled)

22. (previously presented) The method of claim 20, wherein the forming step comprises:
estimating a noise component of the speech signal; and
removing the noise component from each of the speech parameters.

Claim 23 (cancelled)

24. (previously presented) The method of claim 11, wherein the plurality of parameters include a spectral tilt parameter, a pitch correlation parameter and an absolute maximum parameter.

25. (previously presented) The method of claim 11, wherein the removing step removes the noise component from each of the plurality of parameters to generate a plurality of noise-free parameters.

26. (previously presented) The method of claim 25, wherein the comparing step compares each of plurality of noise-free parameters with each of a plurality of a corresponding pre-determined thresholds.

27. (previously presented) The method of claim 8, wherein the step of removing the noise component includes applying weighting to the parameter.

28. (previously presented) The method of claim 27, wherein weighting the parameter includes subtracting a background noise contribution.

Claim 29 (cancelled)

30. (previously presented) The method of claim 20, wherein the plurality of parameters include a spectral tilt parameter, a pitch correlation parameter and an absolute maximum parameter.

Claim 31 (cancelled)

32. (previously presented) A speech coding device for classifying a speech signal having a background noise portion with a background noise level, the speech coding device comprising:

 a parameter extractor module configured to extract a parameter from the speech signal to be used for classifying the speech signal;

 a noise estimator module configured to estimate a noise component of the parameter;

 a noise removal module configured to remove the noise component from the parameter to generate a noise-free parameter;

 a comparator module configured to compare the noise-free parameter with a pre-determined threshold, wherein said pre-determined threshold is unaffected by said background noise level; and

 a classification module configured to associate the speech signal with a class in response to the comparator module.

33. (previously presented) The speech coding device of claim 32, wherein a plurality of parameters are extracted to classify the speech signal.

34. (previously presented) The speech coding device of claim 33, wherein the plurality of parameters include a spectral tilt parameter, a pitch correlation parameter and an absolute maximum parameter.

35. (previously presented) The speech coding device of claim 33, wherein the noise removal module removes the noise component from each of the plurality of parameters to generate a plurality of noise-free parameters.

36. (previously presented) The speech coding device of claim 35, wherein the comparator module compares each of plurality of noise-free parameters with each of a plurality of a corresponding pre-determined thresholds.

37. (previously presented) The speech coding device of claim 32, wherein the noise removal module applies weighting to the parameter.

38. (previously presented) The speech coding device of claim 37, wherein weighting the parameter includes subtracting a background noise contribution.

Claim 39 (cancelled)

40. (previously presented) A computer program product for classifying a speech signal having a background noise portion with a background noise level, the computer program product comprising:

code for extracting a parameter from the speech signal;
code for estimating a noise component of the parameter;
code for removing the noise component from the parameter to generate a noise-free parameter;

code for selecting a pre-determined threshold, wherein selection of said pre-determined threshold is unaffected by said background noise level;

code for comparing the noise-free parameter with a said pre-determined threshold;
and

code for associating the speech signal with a class in response to the code for comparing.

41. (previously presented) The computer program product of claim 40, wherein a plurality of parameters are extracted to classify the speech signal.

42. (previously presented) The computer program product of claim of 41, wherein the plurality of parameters include a spectral tilt parameter, a pitch correlation parameter and an absolute maximum parameter.

43. (previously presented) The computer program product of claim of 41, wherein the code for removing removes the noise component from each of the plurality of parameters to generate a plurality of noise-free parameters.

44. (previously presented) The computer program product of claim of 43, wherein the code for comparing compares each of plurality of noise-free parameters with each of a plurality of a corresponding pre-determined thresholds.

45. (previously presented) The computer program product of claim of 40, wherein the code for removing includes code for applying weighting to the parameter.

46. (previously presented) The computer program product of claim of 45, wherein the code for applying weighting includes code for subtracting a background noise contribution.

Claim 47 (cancelled)

48. (previously presented) The method of claim 24, wherein said spectral tilt parameter is weighted to generate a noise-free spectral tilt parameter during the step of removing, said pitch correlation parameter is weighted to generate a noise-free pitch correlation parameter during the

step of removing and said absolute maximum parameter is weighted to generate a noise-free absolute maximum parameter during the step of removing.

49. (new) The method of claim 30, wherein said spectral tilt parameter is weighted to generate a noise-free spectral tilt parameter during the step of forming, said pitch correlation parameter is weighted to generate a noise-free pitch correlation parameter during the step of forming and said absolute maximum parameter is weighted to generate a noise-free absolute maximum parameter during the step of forming.

50. (new) The speech coding device of claim 34, wherein the noise removal module weights said spectral tilt parameter to generate a noise-free spectral tilt parameter, the noise removal module weights said pitch correlation parameter to generate a noise-free pitch correlation parameter and the noise removal module weights said absolute maximum parameter to generate a noise-free absolute maximum parameter.

51. (new) The computer program product of claim of 42, wherein the code for removing weights said spectral tilt parameter to generate a noise-free spectral tilt parameter, the code for removing weights said pitch correlation parameter to generate a noise-free pitch correlation parameter and the code for removing weights said absolute maximum parameter to generate a noise-free absolute maximum parameter.